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THE TROPICAL AGRICULTURE RESEARCH AND HIGHER EDUCATION CENTER (CATIE) 2001-2002

Panama City, Panama

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1. INTRODUCTION

The Tropical Agricultural Research and Higher Education Center is a civil non-profit institution created in 1973 through an agreement between the Inter-American Institute for Cooperation on Agriculture (IICA) and the Costa Rican government.

CATIE is a regional organization with a recognized history dedicated to research, education and the execution of development projects in agriculture, and natural resource management in tropical America. The Center's headquarters is located in Turrialba, Costa Rica and it has the following regular members: Belize, Bolivia, Colombia, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, the Dominican Republic, Venezuela and the Inter-American Institute for Cooperation on Agriculture (IICA). In addition, CATIE has 7 subscriber members. As of December of 2002, these included: the Puerto Rican Department of Natural Resources, PALMAVEN (Venezuela), the Costa Rican Electricity Institute (ICE), American Cocoa Institute (ACRI) and the Municipality of Zamora (Ecuador), The State of Chiapas (Mexico), the National Forestry Commission (Mexico) and Spain as an Affiliated Member Country.

CATIE's long term vision for its Region of mandate is that:

"The rural sector be consolidated as a key element in the process toward sustainable development, contributing to social equity and the improvement of the quality of life in Tropical America."

To accomplish this, CATIE has organized its activities into two technical departments: "Agriculture and Agroforestry" and "Environment and Natural Resources." Each of these departments comprises various theme groups which develop research, graduate-level instruction and outreach activities.

The institution is directed by the Inter-American Board of Agriculture (JIA) which has the role of Constituting Assembly; the Council of Ministers which is comprised of the Ministries of Agriculture of the CATIE Member Countries; and the Board of Directors that includes representatives from the private education, financial and scientific sectors. Their guidelines are applied by the Director General with the help of personnel who specialize in the different areas and themes that this international organization develops.

This report, in accordance with Article Nine of CATIE's Constitutive Contract, presents the Center's most relevant achievements during the biennial period from 2001-2002.

2. EXECUTIVE SUMMARY

This report summarizes the main activities and achievements of the Governing Bodies (the Board of Directors and the Council of Ministers) during 2001 and 2002, as well as the technical, administrative and financial management of the General Directorate as related to CATIE's internal management and External Cooperation, the Strategic Planning Program, and the Research, Teaching and Outreach Programs.

During 2001 and 2002, CATIE's governing bodies implemented important institutional changes in light of: i) recommendations suggested by the External Review conducted in 2001; ii) proposals made by CATIE managers and employees after intense participatory processes; and, iii) the proposed new strategic plan for 2003-2012 and consultations made in 2001 at different levels in CATIE member countries.

The Center made important progress in the implementation of a regionally networked research program, involving more than 50 regional research collaborating institutions in Tropical America. In addition, CATIE, in a joint effort made with IICA, is playing an important role in strengthening SICTA, the Central America Regional Board for research, and in FONTAGRO, a regional Latin American forum for the same purpose.

The execution of regional research and development programs that link research, development and policy analysis, aiming at achieving a balanced level of decentralization with strong links to core activities have been the focus of CATIE´s efforts in the member countries. Some example of those programs are FOCUENCAS, a watershed management program in Honduras and Nicaragua (with funding from SIDA); Environmental services in silvopastoral systems (GEF-WB) working in Colombia, Costa Rica and Nicaragua; Rehabilitation of degraded pastures (NORAD) working in Guatemala, Honduras and Nicaragua; and Organic Cacao (GEF-WB and OAS) working in Costa Rica and Bolivia respectively.

New research topics and reinforcement of some research and development areas have been introduced to complement and modernize CATIE´s research agenda. Some of those new lines of priorities are related to silvopastoral systems, environmental economics, competitiveness of eco-enterprises, organic agriculture, climate change, environmental policy and watershed management oriented towards reduction of risk and vulnerability.

The enrollment in the Masters Programs now stands at 130. Additionally 25 students are enrolled in the Doctoral Programs developed in partnership with the Universities from Idaho, Purdue, Wales and Luisiana State University (LSU). This represent a 25% increase in the enrollment of the Graduate School. During the period considered, important improvements in the administration as well as in strengthening the Alumni Association and in financial support to the Programs were made. In particular, CATIE and the University of Idaho were successful in a highly competitive program with the National Science Foundation of the United States in obtaining significant funding for scholarships.

The 2001 and 2002 were historic record years in terms of number of publication in scientific referred journals. This peak in scientific output was due, in particular, to the extraordinary effort of the agroforestry group.

CATIE´s offices in most of the countries have been strengthened, despite the fact that the allocation of core funding continued to be very limited. Innovative mechanisms to link CATIE´s Research and Development projects activities to additional technical assistance and training services to attend national demands were developed. The portfolio of projects and activities generated directly by the Technical Offices increased. Efforts put on planning, monitoring and evaluation of the National Offices led to a clear definition of these offices to technical activities as

well as positioning CATIE as a highly qualified institution linking the environment with development.

3. ACHIEVEMENTS AND PROGRESS

Upper Management

Governing Council

During 2001 and 2002, CATIE's Governing Council held two regular meetings and one extraordinary one. The following were the main products of these meetings:

- An analysis of the institutional situation of the Strategic Planning and Financial Programs
- An analysis of the proposed new Strategic Plan for 2003-2012
- An analysis of the Research, Education and Outreach Programs
- Ratification of the Center's budget for 2001 and 2002 approved by the Board of Directors
- Admission of the Costa Rican Electricity Institute (ICE), PALMAVEN (Venezuela), American Cocoa Institute (ACRI) and the Municipality of Zamora (Ecuador) as Affiliated Member Institutions and Spain as an Affiliated Member Country
- Support of IICA's new Director General, Dr. Chelston W.D. Brathwaite
- Insistence that CATIE plan a joint meeting with the Ministers of Agriculture and the Environment
- Ratification of CATIE's elected Board of Directors

Board of Directors

During 2001 and 2002, CATIE's Board of Directors and its committees met on four occasions, with the purpose of analyzing the different activities of the three major institutional programs. The main results generated at these meetings are listed below:

- Regular membership of Bolivia.
- Approval of the affiliated membership to CATIE of the Costa Rican Electricity Institute (ICE), PALMAVEN (of Venezuela), American Cocoa Institute (ACRI), the Municipality of Zamora (Ecuador), the Mexican State of Chiapas and the National Forest Commission of Mexico (CONAFOR) as Affiliated Member Institutions (jointly with the Governing Council).
- Approval of the 2001 and 2002 Budget Programs, submitted afterwards to the Governing Council for ratification.
- Strong encouragement that the member countries of CATIE become current with their membership fees.
- Approval of the following By–laws: Affiliated Members, Election of Board members, Consultancies, Institutional Awards, and Election or Re-election of CATIE's Director General.
- Suggestions and support for the elaboration of the new Strategic Plan.
- Support and suggestions for the elaboration of the CATIE-IICA Cooperation Agreement.
- Approval of CATIE's new institutional structure.

- Authorization for the Director General to sign agreements with NORAD, the World Bank and the Inter-American Development Bank for projects exceeding US$500,000.

Office of the Director General

Strategic Leadership. The elaboration of the new Strategic Plan 2003 – 2012 was concluded and the document was presented to the Board of Directors and Council of Ministers during the 2002 meetings. A Medium Term Plan was written and distributed to the Board and all the staff of CATIE. The elaboration of the new Plan was based on an extensive analysis of regional demands and consultations at country level.

During 2001, an independent external evaluation for the period 1996-2000 took place. In addition, specific Nordic consultancies completed the institutional and financial analysis of CATIE, in order to adjust its strategies and structure. Some of the most important recommendations referred to:

- The institutional structure, definition of core, fund raising and outsourcing: in particular the External review recommended that the structure should be revised, simplified and made more effective.
- The policy to incorporate affiliated member organizations and other countries of the Americas as full members
- The conformation of a consortium for agricultural and natural resources R&D between IICA and CATIE as equal partners
- Efforts to introduce a more open and participatory management system
- Modernization of graduate courses' modalities, including the following elements: development of joint (graduate) programs through strategic alliances with universities
- Strategic adjustments in the research priorities: in particular engaging and strengthening the following thematic areas: tropical fruit trees and integrated livestock management. A specific recommendation also refers to the need for strengthening conservation, improvement and management of genetic resources.

During the 2001 – 2002 period, efforts were made to implement substantial changes, mostly based on the External Review recommendations. Some of them are:

- A new management and team building was introduced. Discussion groups made recommendations to the DG to redefine the Center´s structure, fund raising as well as outsourcing strategy.
- A strategic Directorate was created and additional responsibilities related to Outreach were assigned to this Directorate. A new Directorate of regional Technical Services was created in 2002. This Office is considered as CATIE´s main instrument to participate in bids and tenders at a regional level, a function of importance because of CATIE's increasing dependence on funding that originates in multilateral agencies.
- CATIE´s Council of Ministers has been strengthened: in particular, an initiative to include the Ministers of Environment was approved; also, joint meetings of CCAD (Ministers of Environment of Central America) and CAC (Ministers of Agriculture of Central America) are being planned.

- Improvement of relations between IICA and CATIE: a concept paper analyzing the opportunities for joint cooperation between the two institutions, and efforts at a national level to define a joint agenda and working plans were developed. The objective is to build a joint future of cooperation and mutual understanding. In fact a very positive partnership has been developed toward strengthening SICTA, as well as increasing CATIE´s involvement in FORAGRO.
- The portfolio of membership has been enlarged. Outstanding progress was experienced . Bolivia and Paraguay are part of the group of Regular Member countries. Spain became a new affiliated member; this is an important result as cooperation between Spain and CATIE´s member countries can be improved in the area of science and technology as well as in the area of high education and outreach activities.

Membership. Bolivia joined CATIE as a new regular member, and Spain and CONAFOR-México were accepted as a new affiliated members. Switzerland was invited to join CATIE as an affiliated member taking into account previous contributions to the Center's endowment funds.

Administration and Finances

CATIE has areas and units responsible for offering logistical, administrative and financial services to support CATIE's activities. These areas and units can be classified into three types: those dedicated to the administration of human and financial resources; those in charge of generating resources to support the core budget; and those dedicated to supporting logistics and infrastructure.

Administration of Human and Financial Resources	Productive Activities	Logistical/Legal Support and Infrastructure
• Accounting and Finances Area • Human Resources Area	• Farms • Housing • Transport	• General Services • Computer Center • Maintenance • Legal Advice

Finances. CATIE's activities are financed through five funds managed separately according to origin and application of resources.

- *Core Fund*: Is funded by the member countries' annual membership dues (13 countries in 2001 and 2002, US$ 50.000/country); the regular contribution from IICA (US$1.000.000/year); and incomes from teaching activities; sale of goods and services (project overhead, journals, books, and income from productive activities); and core fund contributions from the honorable governments of Sweden, Denmark, Norway and Finland (See Table 1).

- *Productive Activities Fund*: This fund is made-up of the income earned from agricultural, and animal husbandry activities and infrastructure (housing and vehicles), that provide income for the core budget and cover operational costs. These provided US$352.606 and US$246.405 net funds to the core budget in 2001 and 2002 respectively.

- *Managed Funds*: These are small funds managed by CATIE to support research and graduate scholarships. These are managed independently since they require greater accounting agility and transparency. These funds are classified under the headings “education”, “institutional” and “specific” (see Table 2).

- *Project and Agreement Funds*: These are restricted funds that have specific conditions defined and established by signed agreements and projects. During 2001, US$ 9.366.842 corresponding to 69 projects, was managed in this fund. During 2002, US$ 7.680.559 corresponding to 81 projects was managed.

- *Institutional Funds*: This is an accounting register that allows the administration to control and record institutional assets.

Table 1. Specific contributions to the core fund.

	2001	2002
IICA	1.000.000	1.000.000
Norway	400.000	300.000
Sweden	1.202.648	976.342
Finland	313.713	144.569
Denmark	200.283	106.451
TOTAL US$	3.116.644	2.527.362

Table 2. Distribution of managed funds.

	2001	2002
Education	904.496	854.874
Institutional	113.501	231.369
Specifics	1.362.437	1.742.783
TOTAL US $	380.434	2.829.026

CATIE is audited annually by an internationally-recognized, prestigious external auditing firm. This firm is chosen by the Inter-American Board of Agriculture (JIA) through an external bidding process to audit the financial statements of both CATIE and IICA. In addition, CATIE's agreements and special projects are audited periodically by other external firms contracted by the donors.
In addition, CATIE has an Internal Auditing Department which reports directly to the CATIE Board of Directors, and which reviews the institution's management of funds, project expenditures, institutional accounts and control procedures.

Tables 3 and 4 present CATIE's financial statements for 2001 and 2002 as indicated in the auditing statements for those years.

Table 3 shows the balance of funds for the years indicated. It can be seen that there was a significant increase in assets, mainly through investments in buildings, laboratory equipment, and from growth in CATIE's support to the trust fund for the Cátedra Latinoamericana de Bosques. These are important investments that CATIE has made to strengthen and support the Center's research and educational activities and create trusts that ensure CATIE's sustainability. The increase in cash corresponds mainly to resources from new agreements and contracts.

Table 3. Assets, liabilities and combined fund balance for 2001 and 2002 ($US)

	2001	2002
ASSETS		
Circulating Assets:		
Cash	3.880.610,00	4.914.586,00
Negotiable bonds	251.837,00	70.423,00
Accounts and Invoices		
CATIE Partners	1.413.989,35	1.754.152,44
Other parties	2.076.867,65	1.815.187,56
Total accounts to be charged	**3.490.857,00**	**3.569.340,00**
Inventory	180.765,00	203.925,00
Total circulating assets	**7.804.069,00**	**8.758.274,00**
Buildings, machinery and equipment	3.395.024,00	6.307.338,00
Other assets	18.404,00	296.826,00
Funds in trust	450.000,00	600.000,00
TOTAL ASSETS	**11.667.497,00**	**15.962.438,00**
LIABILITIES AND FUND BALANCE		
Circulating liabilities:		
Accounts payable and accumulated expenditures	1.520.052,00	1.707.289,00
Managed funds	1.192.992,00	1.529.127,00
Donors - agreements and contracts	2.294.630,00	2.728.694,00
Differed Income and other Liabilities	177.057,00	417.519,00
Total circulating liabilities	**5.184.731,00**	**6.382.629,00**
TOTAL LIABILITIES		
FUNDS BALANCE	**6.482.766,00**	**9.579.809,00**
TOTAL LIABILITIES AND WORK FUND	**11.667.497,00**	**15.962.438,00**

Regarding Table 4, it is important to indicate that at the close of the 2001 fiscal year there was a deficit of US$261,488 owing to the fact that less income was generated than had been predicted. In addition, there was a loss precipitated by the currency exchange difference caused by the devaluation of the Swiss crown with respect to the US dollar.

To prevent this type of situation from reoccurring, a more conservative budget was calculated for 2002 and the income and expenditure budgets were monitored more closely. Consequently, there was a surplus at the end of the 2002 fiscal year.

Budget Distribution. Table 5 presents an overview of the distribution of expenditures organized under the most important headings in which the funds were invested.

Table 4. Balance of Income and Expenditures of the Core Project Budget for 2001 and 2002

	2001	2002
INCOME		
PARTNERS' DUES	1.678.123,00	1.650.000,00
Technical Support Services	220.510,00	228.045,00
Donor Activities	652.683,00	718.886,00
Productive Activities	1.906.994,00	1.358.941,00
Administrative and Logistical Support	756.749,00	516.235,00
Exchange rate difference	- 149.214,14	2.618,70
Other income	198.226,14	51.601,30
Donations and Specific Contributions	2.531.480,00	1.831.740,00
Subtotal	**7.795.551,00**	**6.358.067,00**
Income from Agreement and Contract Funds	9.366.842,00	7.680.559,00
Income from Managed Funds	2.380.434,00	2.829.026,00
TOTAL INCOME	**19.542.827,00**	**16.867.652,00**
EXPENDITURES		
General Directorate and Governing Bodies	643.281,00	748.112,00
Administration and Services	983.582,00	1.231.678,00
Technical Programs	4.624.763,00	3.143.404,00
Productive Activities	1.805.413,00	1.110.580,00
Subtotal	**8.057.039,00**	**6.233.774,00**
Expenditures from Agreement and Contract Funds	9.366.842,00	7.680.559,00
Expenditures from Agreement and Contract Funds	2.380.434,00	2.829.026,00
TOTAL EXPENDITURES	**19.804.315,00**	**16.743.359,00**
Surplus of Income over Expenditures	**(261.488,00)**	**124.293,00**

Table 5. Budget distribution for 2001 and 2002

DEPARTAMENT	2001	%	2002	%
Governing Bodies	497.614	3	535.861	3
Support Programs (STR[1] and Internal Auditing)	310.588	2	212.249	1
Administration and Finances [2]	960.161	5	1.231.678	7
Technical Programs	2.320.717	12	2.139.791	13
Regional Outreach and Strategic Planning [3]	1.859.748	9	497.606	3
Education Program [4]	444.300	2	506.009	3
Productive Activities	1.663.913	8	1.110.580	7
Projects	9.366.842	47	7.680.559	46
Managed Funds	2.380.434	12	2.829.026	17
TOTALS	**19.804.317**	**100**	**16.743.359**	**100**

(1) Technical Regional Services (SRT)

(2) In 2002 it was transferred to the Computer Center under the Administration and Finances Department

(3) In 2002 some offices were reclassified that had been included under the supervisión of this Department. The institutional development project (SIMO) and the Monitoring and Evaluation project financed by DANIDA ended. Affiliate members were moved to the project heading. The Planning Departments and the Technical Offices remained in the countries.
(4) It is important to underscore that the amount indicated here corresponds basically to the costs of administration and management of the Graduate School. That corresponding to professors is distributed among the Technical Programs and Projects headings.

Strategic Planning

During 2001-2002, and for the first time in CATIE’s history, efforts were directed towards elaborating a complete set of planning tools including:

- ✓ The Strategic Plan for the period 2003-2012, based on an analysis of regional tendencies and demands, which included consultation with more than 700 persons and a number of stakeholders in CATIE's member countries and abroad (from the governmental sector and civil society).
- ✓ an institutional Medium-Term Plan, which is expected to be refined during 2003; as well as medium-term plans for the Departments. Formal working sessions were carried out with technical areas and with high level committees.
- ✓ logical frameworks with monitoring plans for several units and new R&D projects negotiated recently.

Didactic materials for PM&E have been elaborated based on systematization of case studies (mainly CATIE’s projects). Also a graduate course in Planning, Monitoring and Evaluation of conservation and development projects was taught.

In 2001 the Human Resources Area was assigned to the Planning Department and in 2002 it was transferred to the Administration and Finance Department. In addition, the responsibility of the National Technical Offices and the Training Area was assigned to the Strategic Planning Department which was renamed the Regional Outreach and Planning Department. Nevertheless, for reasons of clarity, the achievements of the Strategic Planning Department and the Regional Outreach departments are presented separately and in detail below.

Two projects key to CATIE’s institutional strengthening process ended in 2002: “Monitoring and Evaluation” and “SIMO”. Both were financed by the Danish Cooperation Agency. The Planning Department has continued its planning process strengthening activities, though at a lower level of intensity.

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Products. Following its work thrusts, the Regional Outreach and Strategic Planning Department produced the following products:

(a) Planning policies and methodologies

- Published and distributed a PME policy document approved by the CATIE Board of Directors
- Medium-Term Standard Plans made public
- Trainers and facilitators from CATIE's operative entities (technicians from CATIE and their counterparts) were given training in the use of logical frameworks and M&E tools.

(b) Strategic planning process

- Draft of CATIE's 2003-2012 Strategic Plan
- Demand Analyses to more than 700 participants from the CATIE member countries particularly in the different sectors (public, private, NGO's and Academic); analysis of the priorities of CATIE's technicians, researchers, and administrative personnel, donors and other CATIE partners.

(c) Medium and short-term planning

- Medium-term plans for the different Technical Areas in the Training Area and the National Technical Offices
- Support to the new project and Unit planning Training to agroforestry network members (Nicaragua, Honduras, Guatemala and El Salvador) and projects executed by CATIE partners (in particular Nicaragua and Guatemala)
- Technical assistance and follow-up to CATIE operative entities

(d) Monitoring and Evaluation of performance and impact

- M&E system for small projects (PROFOR and IPM and FOCUENCAS)
- M&E system for promising initiatives (ProManejo, Brazil)
- Publication of M&E results PROSEFOR
- Creation and dissemination of didactic materials for training and graduate courses in planning, monitoring and evaluation

(e) Human Resources policy and management

- Creation and adjustment of Human Resources management tools (Human Resources procedures manual, adjustments to the Regulations for International Professional Personnel and the Regulations for outside consultants approved
- Procedures to decentralize the management of personnel in member countries; simplification of routine processes.

(f) Support to other CATIE entities
In addition to the support given to the Research and Teaching programs in the region (FORAGRO, SICTA, Universities, etc.) the administration supported the General Directorate in the following areas:

- Revised, published and distributed an Institutional Development Plan
- Proposal for tightening the CATIE structure; leadership of the ad-hoc group and presentation of recommendations to the Director General
- External evaluation of CATIE and technical assistance missions in administration and finances to CATIE: support to the missions; synthesis, dissemination and facilitation to discuss the recommendations
- Helped design CATIE science week
- Helped prepare and define budgets

External Cooperation

Donations from more than 44 organizations were received which represented approximately US$18.039.486 (See Table 6).

Table 6. Contributions to CATIE's research and educational activities for 2001 and 2002 (US $).

country / institution	2001	2002
Bolivia (FORCIAT)		9.030
Brazil (Sunny)		27.090
Denmark (DANIDA)	178.204	1.063.682
Dominican Republic (Plan Sierra)	9.030	7.700
Ecuador (PROMSA)	7.700	-
France (CIRAD-INCO-IRD, INIBAP)	405.446	203.603
Germany (GTZ, DDA KFW)	419.982	776.482
Guatemala (MAGA-AID)		36.120
Honduras (PNUD/PAAR)	297.013	498.630
Japan (ITTO)		9.030
Nicaragua (PROFOR, INTA Y POSAF)	7.700	104.727
Costa Rica (ICAFE, LA PACIFICA, Río Lajas)	108.746	44.648
The Netherlands (Fundecooperation, CIPAV)	100.891	38.179
Norway (NORAD)	1.867.642	2.341.919
FUNDATROPICOS	239.943	271.002
México Nayarit State, FIDA, CONACYT	52.120	115.034
Panama (IDIAP)	82.320	30.800
Sweden (SIDA)	1.587.135	1.515.861
Switzerland (COSUDE)	620.859	638.974
United Kingdom (NRI,OXFORD,CABI)	133.411	101.318
Belgium (CASFOR)	83.058	8.191
United States of America (USAID, USDA, OAS)	265.120	703.447
Venezuela (FUNDAYACUCHO)	-	9.030
Other institutions (CIFOR, WWF, IPGRI, CIAT, IDB ACRI, WB, etc.)	1.726.209	1.292.460
Total	**8.192.529,93**	**9.846.957**

Source: Audited financial statements. These figures do not include contributions to the Center's core budget.

4. PROGRESS AND ACHIEVEMENTS IN THE GENERATION AND TRANSFER OF KNOWLEDGE

Education Program for Development and Conservation

The CATIE Graduate School has offered coursework leading to a Master's degree since 1942 and Doctoral-level coursework since 1996, in fields related to agriculture and the conservation and sustainable management of natural resources. The school's objective is to create professionals who are committed to sustainable development and possessing of the knowledge and skills necessary to effectively and efficiently perform their roles as agents of change for the productive use and conservation of natural resources and the protection of the environment. The institution offers two options for study: master (two years), and doctorate (three years). The main achievements during this period have been:

The masters program. In 2001 the admissions procedure was changed in order to facilitate the paperwork while maintaining the same high standards. This procedure was based on the analysis of the candidates' academic performance and CV, as well as exams in English and the candidates' field of interest. In 2002, the academic council agreed on a series of changes to be implemented in 2003, to adapt the program to the current educational needs in the region; such as improving the efficiency of resource use at the graduate school. Some of the changes are: the transition to a modular course structure (some courses offered in 6-week modules); to offer some courses in English; to update the content of several courses; and the development of new interdisciplinary courses.

The Doctoral (PhD) Program. The PhD program at CATIE continues improving. Under the program, we now have students under the joint programs between CATIE and the universities of Wales (UK) and Idaho (US). Discussions about joint Ph.D. programs and joint research between CATIE and Purdue University and the University of Minnesota have been held. Students come not only from countries that have traditionally fed into CATIE but also from the USA, United Kingdom, Japan, and Surinam, creating a truly international environment.

Under the National Science Foundation program called IGERT, CATIE continued to have (fully funded) student growth involving up to 15 additional doctoral students under this program alone over a three year period. The program operates under the joint doctoral program with University of Idaho.

The graduate Council adopted a publication policy for all doctoral research which, among others, requires publication in international professional journals.

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Scholarship/loan program for CATIE graduate students. In follow-up to the Board of Director's resolution in 2001, a scholarship/loan program was put in operation. The fund is designed to complement the students' budget and specifically cover the costs of courses and related expenses. This will allow for a rotating fund that will make it possible to support other students in the medium term. Sixty-three scholarships of this type have already been awarded.

Other funding sources During the report period, the graduate school received financial support from several national and international agencies including: OAS, IDB, World Bank, Ford Foundation ASDI (through the Cuencas and Focuencas project), Danida, NORAD, GTZ, JICA, AID, USDA, DAAD (Germany), CONACYT (Mexico), FundAyacucho (Venezuela), CORPOICA (Colombia), FONACIT (Venezuela), IDIAP (Panama), Fundatropics, Avina Foundation, and the British Embassy. Their support confirms the importance of creating human capital in sustainable agricultural development and natural resource and the environmental management.

Cooperation with Regional Institutions: CATIE in cooperation with ANAM, is teaching a joint program with the University of Panama involving 19 students of ANAM. The four modules in this program are divided equally between the University of Panama and CATIE. Graduate credits are to be given to students by both the University of Panama and CATIE in accordance with current policies and regulations of each institution. Also, in partnership with EARTH and ZAMORANO, CATIE has elaborated and negotiated a first phase of a project (SIDA funding) to

develop, in a participative way, a project proposal to strengthen institutions of higher learning in Honduras and Nicaragua.

Research-Graduate Education Integration. It is now more than ever clear that graduate students carry the bulk of the research being carried out at CATIE. At the end of 2002, there where 56 projects completed in a number of countries in our region. In addition to Masters students, the doctoral students will be contributing to the completion of research at a higher level.

General Improvements continued: CATIE continued to make many smaller but important improvements designed to bring the operations to international standards. For example, the new web site, in both Spanish and English, is now available on line. The site permits on-line filing of applications and provides up to date information. In addition, the listing of our courses, forms required by the graduate school, etc. are now all available on line for use by our current students. The Program continues to enhance the bilingual capabilities of the School by providing opportunities to staff who need enhancement of their language skills. In addition, the English program at CATIE continues to expand and adjust services for TOEFL preparation, more effective scientific presentation (in English), etc. We continue to enhance efficiently by combining the office of Admissions with the Office of Alumni Affairs thereby reducing staff.

Alumni Association. During this period the rules for an Alumni Federation were developed. More than 1,700 names have been listed. The first alumni reunion is planned for 2003.

Students

Masters Program. In the 2001-2002 period 119 students were graduated, there come from 19 countries in the Americas and from Japan. There was about 20% growth in the number of students in this program compared to 2000. In 2002 70 students were admitted for the 2003-2004 academic year. Tables 7 and 8 show the distribution of the masters students according to field and country of origin.

Table 7. Classification of the masters students according to emphasis.

		class 2000-01	**2001 – 02**	**2002 - 03**
I	*Ecological Agriculture*	*9*	*14*	*12*
	Phytogenetic and Biotecnology Resources	7	11	
	Sustainable Tropical Agriculture	2	3	
II	*Tropical Agroforestry*	*11*	*13*	*11*
III	*Watershed Management*	*11*	*14*	*16*
IV	*Management and Conservation of Tropical Forests and Biodiversity*	*13*	*10*	*19*
	Forestry Production Systems Management	5	6	
	Biodiversity Conservation	8	4	
V	*Environmental Socioeconomics*	*14*	*10*	*11*
	Administration and Management	13	9	
	Environmental Economics and Sociology	1	1	
Total		**58**	**61**	**69**

Doctoral Program. In 2002 x students graduated from the Doctoral Program which is a joint program with several North American and European universities. At the end of 2002, the program had 21 students from 13 countries. See tables Z and V for a detailed breakdown.

Table 8. Masters students by country (2000-2002).

country	00-01	01-02	02-03
Argentina	1	0	0
Belize	1	0	0
Bolivia	1	2	3
Brazil	9	1	1
Colombia	3	7	10
Costa Rica	7	5	8
Ecuador	1	4	7
El Salvador	4	1	2
Guatemala	7	4	5
Haiti	0	1	0
Honduras	6	8	4
Japan	0	0	1
México	5	3	2
Nicaragua	4	12	12
Panama	1	8	8
Paraguay	1	0	0
Peru	0	2	5
Dominican Republic	1	2	1
Venezuela	3	1	0
Total	**55**	**61**	**69**

Table 9. Country of origin of doctoral students, as of December, 2002

Country of origin	students
Bolivia	1
Colombia	1
Dominican Republic	1
El Salvador	1
Guatemala	1
Honduras	1
Japan	1
México	5
Panama	1
Paraguay	1
Suriname	1
USA	3
Venezuela	3
Total	**21**

Table 10. Distribution of doctoral students by field and cooperating institution, as of December 2002.

Area of Study/Topic	University of Idaho	University of Florida	Purdue University	U Wales	Luisiana State U	Total
Biodiversity	1					**1**
Ecological Agriculture	2	1				**3**
Entomology	1					**1**
Environmental and Rural Development			1			**1**
GIS	1					**1**
Sociology and Environmental Economics	1					**1**
Tropical Forest Science	1					**1**
Tropical Agroforestry	1	1	1	7	1	**11**
Tropical Forest Sciences		1				**1**
TOTAL	**8**	**3**	**2**	**7**	**1**	**21**

Research Program

This program has two purposes: i) to generate knowledge about the biophysical, ecological and socioeconomic processes for different production systems and their components; ii) to generate integrated technologies, and sustainable agriculture and natural resource management systems; and iii) to produce information, scenarios and options for development based on agricultural and natural resource management at various levels (germplasm, production systems, ecosystems).

Management issues. CATIE´s Scientific Committee consists of eight members: Deputy Director General (President), Director General, Director of the Education Program, and five coordinators of the research lines.

During 2001, each coordinator, together with the researchers in the respective research line, updated the research activities into sub-lines and research projects. These research projects (on-going and planned) form the basic unit for research at CATIE. During 2002 the most important point analyzed was the allocation of research grants (CATIE's Research Fund) to collaborative projects and future research strategies. Other importan activities of the Scientific Committee during 2001, were the organization of the V Science Week in August 2001 and the preparation of comments to the External Review Report.

Following the new structure initiated on January 2002, the majority of research, education and outreach activities are being carried out by the four new Departments. In addition, CATIE's laboratories, collections and some research/education support units are grouped under the UTA (Technical Support Unit). Theme groups are being created under the Departments. The idea is to replace a rather cumbersome structure with small, flexible administrative "units" consisting of a number of theme, interdisciplinary (and also interdepartmental) theme groups.

The 2001 and 2002 were record years in terms of number of publications in refereed journals, where historic maximum numbers of publications were attained.

Fund raising. Finnish support to the core budget for research was secured for the 2002-2003 period. The amount of support negotiated was approximately 400,000 USD. Part of this support is directed to small research projects selected after a call for proposals, and involving national institutions. These small research projects are carried out jointly with partners in the region. To date, 16 small projects have been executed or are currently on-going. They involve a total of 37 different partners in 9 member countries (approximately 120,000 USD/year). During 2002, from 24 proposals submitted, the Scientific Committee decided to fund 8 projects. Important R&D programs were negotiated. GEF-WB financed a proposal (5 MM USD) for the study of environmental services of silvopastoral systems to be jointly executed with NITLAPAN (Nicaragua) and CIPAV (Colombia). Also NORAD financed an R&D proposal that will address the recovery of degraded pastures. Work will be done in Nicaragua, Honduras and Guatemala. A joint IPGRI-CATIE proposal was presented to Bioseed, a Dutch seed company, for the molecular characterization of CATIE's collections of Capsicum and tomatoes. A concept note to analyze the application of environmental policies on the agricultural frontier was presented to Tinker Foundation and received positive reactions. A full proposal is now being developed. SDC(COSUDE) and FINNIDA are interested in financing climate change research.

In 2002, CATIE was a partner in 13 on-going INCO-DC and 6 FONTAGRO funded research projects (total funding to CATIE: app. 1 million USD). All of them are carried out in cooperation with partners in the region, and in the case in INCO-DC, with partners from Europe.

New initiatives, new collaboration. CATIE-CIAT created a strategic alliance in research and higher education. This includes joint research and other projects, the participation of CIAT scientists in CATIE's Ph.D. and M.Sc. programs etc. USDA has agreed to support CATIE's research activities and conservation of genetic resources. Cooperation with Mexico and Venezuela in research has been promoted through various visits of CATIE staff to Mexico and Venezuela. Cooperation agreements with the CONACYT (Mexico) and Fundación Ayacucho and CONICIT (Venezuela) are prepared. CATIE staff, together with the Swedish Biodiversity Center and the Swedish Agricultural Agency prepared a proposal on a joint project and a joint masters program on biodiversity issues.

Scientific and technical congresses and workshops.

The Fifth Scientific Week (Semana Científica) was held August 22-24, 2001, with co-funding from the USDA. It consisted of four fora (i. Sostenibilidad en el medio rural y certificación, ii. Conservación y utilización de la biodiversidad tropical, iii. Vulnerabilidad humana en Centroamérica, and iv. Manejo adaptativo y participativo de recursos naturales). Four invited speakers were invited: Dr. Albert Schram (Universidad de Costa Rica), Dr. D. Williams (IPGRI, Colombia), Dr. P. Girot (IUCN, Costa Rica), and Dr. M. Altieri (University of California – Berkeley, USA). A research-planning workshop was organized during the week.

In November 2001, CATIE hosted a meeting of SICTA in which the Directors of the National Research Centers from Central America participated. CATIE and IICA in a joint effort, organized the meeting to support the strengthening of this key regional integration organization. One of the topics discussed related to research and development priorities in the Region.

Through an agreement between CATIE and the United States Department of Agriculture, Agricultural Research Service (USDA-ARS) the *Henry A. Wallace Inter-American Scientific Conference* Series was founded in November, 2000. The inaugural conference titled "Globalization of Agriculture", was held February 25 – 27, 2002, in Turrialba, Costa Rica, and attracted 120 participants from 17 countries. The aim of the conference was to encourage and enhance mutual interests in the Latin American and Caribbean region through information exchange on issues relating to tropical agriculture research and development activities. It was also an opportunity for CATIE to markedly enhance its contributions to research and higher education in the region. Speakers and participants discussed research priorities, globalization of agriculture in the American tropics and developed joint strategies. Summaries of these discussions were distributed as Conference Proceedings and were made available to all participants. The conference was also privileged to have Nobel Peace Prize Winner, Dr. Norman Borlaug, attend.

CATIE participated in the *World Summit on Sustainable Development*. Deputy Director General M. Kanninen participated in various events and held several discussions with partner institutions and donor agencies during the Summit. In general, the participation was very positive from the point of the view of improving CATIE's image and presence at international level.

Research activities. Through the end of 2002, the Program concentrated its efforts on 5 lines of research through different research projects:

- Improvement and conservation of the genetic resources of select agricultural and forest species
- Integrated pest management in agricultural, agroforestry and forestry systems
- Tropical agroforestry systems on hillsides, agricultural frontiers and degraded lands
- Development of technologies for sustainable forest and biodiversity management
- Socioeconomic analysis and assessment of environmental policies and goods and services from tropical ecosystems

According to CATIE's database, more than 70 different partner institutions from member countries are involved in research projects. In addition to that, several European partners are involved in CATIE´s research through various projects under the INCO program as shown in the following tables.

Table 11. CATIE's on-going research activities in member countries (2001 – 2002)

Research line	BE	CO	CR	DR	ES	GU	HO	ME	NI	PA	VE	Total
1. Genetic resources	1		6	1	1	1	2	3	1	1	1	18
2. MIP-biocontrol		2	9	1	3	5	4	3	4	3		34
3. Agroforestry-silvop.	1	1	9		2	3	4		6	1		27
4. Forestry & biodiversity		1	12		1	6	2	2	8	3		35
5. Ecosystems			3			2	1	2	1	1		10
Total	2	4	39	2	7	17	13	10	20	9	1	124

Table 12. Research partners in CATIE's member countries (2001 – 2002).

Partner	BE	CO	CR	DR	ES	GU	HO	ME	NI	PA	VE	Total
Ministry	1		2	1	1	1	1		1			8
University		3	3		1	1	2	2	4			16
Research institute		1	1	1			1	2	1	1	1	9
NGO		1	3		1	3	1		1	2		12
Private company			4			1			1	1		7
Producers' org.	1		6		1	1			2			11
International org.		2	3							1		6
Total	2	7	22	2	4	7	5	4	10	5	1	69

Table 13. CATIE's international research partners (2001 – 2002).

Partner	Lat. America *	Europe	USA	Africa	Asia	Total
University	1	14	3			18
Research institute	3	9	2			14
Regional center		1				1
International center					1	1
CG-center	1	1		1	1	4
NGO	2					2
Total	7	25	5	1	2	38

* Non-member nations.

Between 2001 and 2002, the CATIE technicians published xxx articles in regional and international publications (journals, books, conferences, proceedings, presentations, etc.). See the table in Appendix 3 for a detailed list of publications.

Table 14. Publications and presentations (2001 - 2002).

	2001	2002	Total
Scientific			
Articles in scientific journals	36	28	64
Books and monographs		1	1
Chapters in books	9	20	29
Proceedings	2	1	3
Congress, seminars and others	60	67	127
Technical			
Articles in technical journals	75	57	132
Technical Series (CATIE)	28	10	38
Bulletins and others	3	19	22
Academic			
Academic and educative texts	8	12	20
Thesis	56	48	104
Total	**277**	**263**	**540**

Line 1: Improvement and conservation of agricultural and forestry species germplasm

CATIE has prioritized agricultural and forestry species of economic and social importance in the region among which banana and coffee stand out followed by mahogany. Some results and relevant progress made in the report period are presented below.

- **Cocoa:** Renovation of the international cocoa collection / international recognition of the importance of CATIE's work on breeding and selection of cocoa varieties with resistance/tolerance to monilia and black pod disease as well as with high yield potential

- **Coffee:** Mass propagation of 19 improved coffee hybrids under an agreement with ICAFE for participatory selection and validation by farmers under different agro ecological conditions in Costa Rica. Identification of molecular markers linked to resistance to the coffee nematode *Meloidogyne exigua* as well as genetic and molecular studies of male sterility to make F1 hybrids available through seeds

- **Banana & plantain:** Mass propagation of varieties of commercial interest and field evaluation of regenerated plantlets; use of the cell suspension system as basis for the transfer of interesting genes through non-conventional plant breeding. Results were disseminated through an International Congress on "Biodiversidad, biotecnología y bioseguridad, un enfoque hacia Mesoamérica y el Caribe" July 3-5, 2002 (94 participants from 19 countries).

- **Study of genetic diversity in natural populations of *Pinus oocarpa* in Honduras.** This work has indicated that genetically distinct individuals respond differently to environmental modifications and population changes caused by fragmentation and deforestation.

- **The Sustainable Management of Neotropical Tree Genetic Resources Project** has made important strides in determining the distribution of genetic diversity of important tree species and is beginning to generate management recommendations to favor the maintenance of this diversity. Nine species have been studied to date to determine whether their DNA is easy to extract and analyze.

Line 2. Integrated pest management in agricultural agroforestry and forestry systems.

The IPM practices provide advantages which conserve the environment and biodiversity, reducing the risks for farmers, the rural population and consumers alike, and contribute to the sustainability of traditional agriculture and forestry production systems. Information about the projects conducted in 2001 and 2002 is presented below.

Plant protection (Integrated pest management in agricultural and agroforestry systems)

- Low input agricultural technologies for tomato production on hillsides, that also reduce erosion, have been successfully developed in Costa Rica. Benign control methods of whitefly, that gave greater production and lower costs, were validated in participatory projects with groups of producers (including groups of women) and have contributed to community organization as well as to promoting organic agriculture.

- Information on the dispersion, ecology and effects of micro-climate on pests and diseases of coffee, cacao, horticultural crops, maize and beans, as well as on their natural control agents (bacteria and fungi), are contributing to the identification and development of specific biocontrol agents. A critical mass of experts and knowledge in CATIE gives the institution an important opportunity to provide technical assistance and training in this area of growing importance, in particular for the development of organic agricultural options for the region.

- Principally through the GTZ funded project to promote biopesticides, the IPM-AF NORAD funded project, the Whitefly/Geminvirus network (now 21 countries) and CATIE´s Journal "Integrated Pest Management and Agroecology" (66 issues in 16 years; 700 scientific articles), the group has been able to make significant contributions to national institutions,

NGO´s, private sector, Universities, etc, both within and outside of CATIE´s mandate region. These include web sites (e.g. www.bioplaguicidas.org and www.catie.ac.cr/moscablanca), proposals to national and regional authorities (e.g. to OIRSA), documents of very different kinds for a diverse group of users (e.g. IPM-AF NORAD project for farmers to politicians).

- The IPM-AF NORAD funded project helped 50 institutions in Nicaragua, as well as CATIE, ICTA (Guatemala) and DINADERS (Honduras) staff to develop and submit proposals for new projects to continue the participatory farm family and extensionist training initiatives that have been successfully validated by this project. Widespread acceptance and incorporation of these concepts/approaches have been achieved and the project is highly evaluated, both by the donor and by collaborators.

Line 3. Tropical agroforestry systems on hillsides, agricultural frontiers and degraded lands

Agroforestry systems have a great potential for contributing to the sustainability of the production and conservation of natural resources. Information about the projects conducted in 2001 and 2002 is presented below.

Coffee quality, profitability and diversification

- A new group of activities (funding from the UK, Finland, CATIE) to validate organic coffee management has been established in Costa Rica. In addition to contributing to this new focus in CATIE's program, activities have lead to a much closer relationship with neighboring farmers in the Turrialba region.

- Timber shade tree management for coffee system diversification is another line of activities of this group. It consisted of: i) long-term collaborative coffee system trials, where management and research is shared with national universities, mainly in Nicaragua and Costa Rica; and ii) a research network with the national coffee institutions of Central America has been set up with evaluation plots in each country. Both of the above initiatives have a strong focus on developing methodologies and training.

- Excessive shade promotes broca (*Hypothenemus hampei*), but managed shade does not; in addition, bio-control with *Beauveria bassiana* is more effective with managed shade. Predation of the coffee bean borer by ants does not appear to be an effective control option. Possible hyper-parasites or antagonists to the coffee diseases (Roya – *Hemileia vastatrix*) and *Mycena citricolor* have been identified (*Verticillium lecanii* and *Trichoderma* sp, respectively).

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- The consequences of replacing the traditional leguminous shade trees in coffee plantations by fast growing timber trees is being studied within an EU INCO project. Several CATIE M.Sc students and one Ph.D student have contributed to the evaluations which show that *Terminalia ivorensis* not only competes with the coffee for light but also for water and that *Eucalyptus deglupta* is a better choice though the slow rate of decomposition of litter of this latter species limits nutrient return; also, mixtures with trees that provide rapidly decomposing litter, such as *Erythrina poeppigiana*, are preferable.

Modernization and competitiveness of Latin American cacao management

- In Costa Rica and Bolivia, successful involvement of indigenous peoples organizations (ADITIBRI, ADITICA), producers organizations (APPTA, El Ceibo) and local promoters (selected by their own organizations/communities) in the establishment, participatory management and monitoring (e.g. biodiversity) of development projects on their farms and in their region.

- Integration of research, education and development programs in the same projects. Students from many institutions (UK, France, Costa Rica, Bolivia, Colombia and CATIE's Higher Education Program) disseminate their results on themes, chosen with the project partners, to producers, local authorities and leaders, technical teams and to the international scientific community in both written and verbal forms.

- Quantification of the impact of different land use options (e.g. natural forest vs banana plantation vs agroforestry cacao plantation) on biodiversity conservation in buffer zones, effects of hunting, certification and marketing options, biological control of cacao diseases and the availability of useful plant species on indigenous farms (250 identified; 60 are being propagated and re-introduced, including 6 of the principal native timber species).

- A CATIE M.Sc. thesis on the productivity of naturally regenerated *Cordia alliodora* timber from indigenous farms showed that extraction rate could be at least doubled without affecting sustainability of this species. This study is now the basis for discussions, involving indigenous organizations and Costa Rica's Ministry of Environment, about possible changes to regulations that would improve local and commercial timber use options for indigenous farmers.

Ecological livestock management

- Much of the work focused on the development and dissemination, to collaborating organizations and students, of research methodologies to quantify and value environmental services (C, biodiversity conservation) and socio-economic variables in different livestock models. For example, although conversion of silvopastoral plots to secondary forest will increase carbon storage, a large reduction in contracted labor occurs with negative impacts on the poorest people. When compared with forest plantation activities, the opportunity cost to increase C storage by 1 tC/ha varied from US$13 to US$22 depending on the type of farm.

- Two new projects were initiated (GEF-WB and Dutch funding) in Nicaragua, Costa Rica and Colombia, and a third initiative was approved (NORAD), establishing the silvo pastoral

group as the fastest growing and possibly the most highly funded in CATIE (approximately $13 million for the next 5 years). It also could serve as a model to other CATIE theme groups on how to establish a regional program (already from Columbia to Guatemala), working through and with national institutions. This group coordinates research, training and dissemination activities (e.g. electronic platform managed with FAO) with national, regional and in some cases global coverage for a very diverse range of clients; e.g. different workshops have been organized for policy makers, scientists, extensionists and farmers. One of the principal products offered by this group are research methodologies that collaborating organizations and students can use.

- This group has already had a significant impact on decision makers in major multi-lateral agencies (e.g. World Bank), ministries (e.g. the president of CCAD sent a letter of support to NORAD) and national organizations (e.g. collaboration with the national agroforestry commission of Costa Rica to draft a new decree for environmental services [already approved, N° 30962-MINAE]). Decision support tools are being developed; e.g. to evaluate greenhouse gas emissions from livestock systems or for sustainable management, in fragmented pasture dominated landscapes, of trees which contribute to farm productivity and to biodiversity conservation (EU-INCO funded “Fragment” project).

- Innovative methods involving remote sensing, aerial photos, GIS and methods to integrate information provided by both farmers and scientists, referring to different levels of scale (from plot to landscape), are being developed to evaluate silvo-pastoral systems and the trade-offs and synergies between production and conservation goals.

Line 4. Development of technologies for sustainable forest and biodiversity management.

The principal objective of this line of research is to develop strategies and technologies that contribute to the sustainable and diversified management of humid neotropical forests. To accomplish this, research, validation and transfer activities were conducted with the goal of reducing the rate of conversion of natural forests to other uses, as well as to increase the area under sustainable management regimens in Tropical America. The results and progress made in some of the most relevant research projects conducted in this line of work are presented below.

Chair of Ecology in tropical forest management

A summary of the results achieved for each most important topics is described bellow:

- *Sustainable Forest Management and Forest Certification* (collaboration with WWF-Central America and Oregon State University). A draft guide for ecological monitoring for forest certification was completed, incorporating inputs from Mesoamerican Biological Corridor personnel, Guatemalan professionals and the Wildlife Conservation Society, as well as the results of field-testing and validation.

- *Sustainable Management of Neotropical Tree Genetic Resources (INCO).* Several studies of the dynamics of genetic diversity of Vochysia ferruginea in human-impacted ecosystems have been implemented.

- *Ecological elements for the management and sustainable use of biodiversity in anthropogenic landscapes.* The second phase of fieldwork completed; the results of the first phase have been published in regional journal, including recommendations for silviculture and restoration of logged and fragmented forests.

- *Information and Human resources for the Sustainable Management of Forests in Mesoamerica.* A proposal was approved by CATIE/Finnida Research Fund.

Chair of diversified management of tropical forests

- *Forest certification and criteria and indicators for sustainability:* CATIE has strengthened its role as a scientific leader in this subject; several research theses have been developed and national processes have been supported, including participation as a member of the Costa Rican National Forest Certification Commission (established by Law). A Presidential Decree was signed and officially published which includes the new standard for natural forest management in Costa Rica. A research project was developed and started to assess the environmental performance of two forest policies: forest certification and payment for environmental services. Support in the establishment of an inter-institutional alliance for forest certification (with U.N. University for Peace, WWF, Organization for Tropical Studies, and Tropical Science Center).

- A discussion paper was prepared in collaboration with CIFOR, for GEF for the Forestry Roundtable held in conjunction with the United Nation Forum on Forests UNFF in New

York, in March 2002. A Spanish version was launched and presented as keynote address at the First International Seminar "Forests and Environmental Services; challenges and opportunities for investment" held in Lima, in December 2002.

- *Illegal logging control in Costa Rica*: a report on illegal logging in Costa Rica has been widely distributed getting the attention of several institutions outside Costa Rica. It has served as the basis for the Costa Rican National Strategy of Illegal Logging Control (top priority for the Government). The draft of a project to be executed jointly with Environment and Energy Ministry (MINAE) was developed.

- *Central American Forestry Journal:* support was provided to broaden the scope and geographic coverage and update the approach of our international journal. Five papers were published as well as a special issue with the proceedings of the IUFRO International Workshop on Forest Policy and Science Interface.

- *Villa Mills Experimental and Demonstration Area:* general running and maintenance of this strategic Area was provided in coordination with the Ministry of Environment of Costa Rica, including discussions about its future as part of an eventual Model Forest.

- *Landscape Management and Ecosystem Approach:* an intensive analysis was held about CATIE's positioning and future action regarding the Convention of Biological Diversity's Ecosystem Approach and landscape management. A concept note of the Reventazon Model Forest has been developed in coordination with MINAE and ICE and in close collaboration with the Latin American and Caribbean Center for Model Forests. Minister Rodriguez committed initial support. Three research projects were developed and started: a methodology for a participatory planning process of the Model Forest; native tree species selection for ecological landscape restoration in the Model Forest; and evaluation of the impact, processes and conditions of a case study of forest landscape restoration.

- *Development and sustainable management of* Smilax *spp. Project:* The project duration was extended one more year in order to allow for wider dissemination of results. Main studies have concluded, including identification of main species with commercial value and main bioassays to assess extracts' biological activity. Reproduction assays and pilot plantations were established. A draft taxonomic manual for Smilax genus is being reviewed. The edition of a final book based on project results has started. Results were presented to Latin American medicinal plant scientists and producers during "Jornadas Iberoamericanas de Agrotecnología de Plantas Medicinales", in August in Guatemala.

- The growth of *Quassia amara* shrub was monitored in nine long-term research plots. Trends were analyzed this year to formulate recommendation for plantations pruning.

- A doctoral research was initiated about management of xate, a non-timber forest product in the Selva Maya (Petén, Yucatán and Belize). Preliminary discussions have started to develop a project for the sustainable production and commercialization of xate in collaboration with the University of Minnesota.

- *Bamboo Project.* An inventory of "guaduales" in an area exceeding one million hectares was carried out in Colombia using innovative tools: expert knowledge, GIS and aerial photos. An

efficient sampling scheme was developed. A census of bamboo plantations was carried out in Costa Rica. Information was obtained from key informants in institutions like MINAE, CNP and MAG. A literature review of bamboo in Costa Rica was conducted. This information will be included in an information system.

- **CATIE´s Forest Farm.** 60 hectares of plantations of native species were established on the CATIE farm for research and commercial purpose.

- **Forest Seed Bank**. CATIE's Forest Seed Bank has been and continues to be a leader in the management, collection and conservation of germplasm of tree species in Central America. The Bank continues to work with a wide host of partners in these activities, even after funding for the Danish financed PROSEFOR project came to an end.

- **Protected areas and biodiversity.** Several products were achieved of which the most important ones are:
    - Successful negotiation of an eight-month project to manage the protected areas of Montecristo and San Diego La Barra in El Salvador. This project will end in March 2003.
    - An analysis for the redesign of the national system of protected areas in Paraguay (GEF support).
    - The development of a web-based information management system on biodiversity initiated jointloy with CATIE's agroforestry specialists.
    - An agreement was signed with the Network of Private Nature Reserves in Costa Rica to provide support to this important group.
    - The 24th edition of the "International Course on the Management of Protected Areas" with an emphasis on the payment of environmental services was held.
    - Research on the potential of bird populations within the local biodiversity in the buffer zone of the Tapanti-Macizo de la Muerte National Park was concluded. Information and results served as a basis for the publication of a bird-watchers manual and to develop an eco-tourism project proposal to support community development.

Line 5. Socioeconomic analysis and evaluation of environmental policies goods and services from tropical ecosystems.

Results from some of the projects developed in the 2001 and 2002 biennial period are presented below.

Economic valuation of forest goods and environmental services

The most relevant products are:

- Organization and coordination of the international course entitled: Topics in Environmental Economics, CATIE, December 2002-January 2003, with invited lecturers from the Environmental Economics Unit at Gothenburg University and the Beijer Institute.

- Organization of the Regional Symposium on Environmental Socio-economics at CATIE, 2-4 December.

- Organization of workshop entitled “Trade, Agriculture and the Environment: Defining an Agenda for Research and Capacity Building”, CATIE, IICA, CINPE, November 6-7, with participation of the academy, government officials, private organizations and NGOs related to trade, agriculture and environment.

- The program in Forestry Economics was designed and a list of priority research topics was elaborated.

- Elaboration and approval of a proposal by JASEC for professional services for the consolidation of an action plan for the Birris watershed management and a proposal for an adjusted fee for payment for environmental services for protection of the watershed and its defense before ARESEP.

- Analysis of success factors for marketing of organic coffee in Mesoamerica.

- Finishing study and collection of raw material for a book entitled Processes and products for rural innovation in Central America.

- The research on products, markets and commercialization of native tree species in the Mesoamerican countries was concluded as part of the Mesoamerican Trees Project (CATIE/ Oxford). A report was elaborated and it will be published as a chapter in the Mesoamerican Tree Manual.

- Support to the project proposal "Fomento de la Competitividad Agropecuaria Conservacionista", IDB-MAG-CATIE (approved, implementation pending).

- As early as January 2002 CIAT and CATIE developed a shared project to work on the social effects that alternative natural resource management strategies or decisions have on watersheds and on the multiple stakeholders involved in decision making. In April 2002 Mario Piedra joined CIAT's staff and was stationed in Turrialba.

- Coordination of the CERBASTAN Project, which is a multi-stakeholder approach for sustainable development of reforestation technologies for dry rangelands in Guanacaste, Costa Rica. During 2002, three institutions collaborated in this project: Hacienda La Pacífica, CATIE, AVINA Foundation and landowner representatives. The project focuses on successful reforestation of degraded dry rangelands with native timber species and integrates research projects at M.Sc. and Ph.D. level. The initial phase lasts from 2001 to 2004.

Global change

- *Clean Development Mechanism (CDM):* The The CATIE global Change Research group (GCG) has been successful in giving scientific support to the international decision-making process on modalities and rules for including forestation and reforestation (AR) project activities in the CDM. It participates in the preparation of the IPCC special report on Good Practices Guidance and submitted two papers to peer-reviewed journals and several technical papers on the possible implication of modalities and rules on project viability.

- *Modeling Carbon Sequestration in Forested Landscapes:* The GCG was involved in the development of the third version of the CO2-Fix software in the framework of the INCO-funded CASFOR II project. At the same time, research on carbon pools and fluxes in different ecosystems, including managed forests, continued.

- *Decision Support System for Sustainable Ecosystem Management in Atlantic Rain Forest Rural Areas (ECOMAN):* This INCO-funded project started this year with the collection of basic data and preparation of GIS maps for further analysis.

- *Impacts of subsidiary plantations on biodiversity and local development (PABID):* Because of the international debate on the potential impacts of AR CDM project activities on biodiversity and local livelihoods, the GCG prepared a research proposal and won an internal competitive research grant from CATIE (funded by FINNIDA) to start interdisciplinary research on this subject.

- *Payment of environmental services:* The payment of the multiple environmental services provided by well managed landscapes is an interesting hypothesis for how to finance the costs of global change at the local level. In this area, the group conducted project evaluations and contributed to the preparation of project proposals, one of which has been successful, and the others are under consideration by different funding agencies.

Competitiveness of eco-enterprises (CECOECO).

In 2002, the Center for Competitiveness of Eco-Enterprises has been successfully established at CATIE, reflected in its recognition as one of the five thematic groups pertaining to the Department of Natural Resources and Environment. In June 2002, CeCoEco was awarded US$ 34,000 for the three-year project "Design and Facilitation of a Sustainable Forestry Alternatives Network for Latin American Stakeholders (SANet-Forestry)", financed by Sustainable Alternatives Network (SANet)-GEF-UNEP and the German Agency for Technical Cooperation and Development (GTZ). In July 2002, CeCoEco was awarded US$ 10,000 by the Caribbean Citrus Association (Jamaica) to write the Caribbean industry’s position paper regarding maintaining to the Common External Tariff (CET) that enables citrus production to be an economically viable enterprise in the English-speaking Caribbean (CARICOM).

Two project proposals, for which CeCoEco had elaborated the commercial component and provided other inputs, were approved, namely:

- "Improving the Competitiveness and Environmental Performance of Small and Medium Forest Enterprises in Guatemala, Honduras and Nicaragua", financed by IDB-MIF (US$2.5 million of which US$1.7 million come from IDB-MIF).

- "Modernization of the Cacao-Culture in Alto Beni, Bolivia", financed by CICAD-OAS (US$1.5 million).

The following research projects were successfully completed:

- "The Caribbean Citrus Industry: A Case for Sensitive Treatment in Trade Policy"

- "An Analysis of Orange Juice Markets under Global Trade Liberalization"

- "Evaluation of Marketing Strategies for Organic Coffee from Mesoamerica and the Dominican Republic"

- "Making Forest Certification Work: How to increase the monetary benefits of certified community forest operations in Mexico"

- "Valuation of the Environmental Service 'Carbon Fixation' in Agroforestry Systems in Yassica Sur, Matagalpa, Nicaragua".

- Contacts with small and medium eco-enterprises (SMEE) have been established and consolidated with APPTA, APOT and the Development Committee of Santa Cruz, Costa Rica, as well as the Cocoa Cooperative "El Ceibo" in El Alto Beni, Bolivia.

- Contacts with like-minded organizations have been established with SANet (France), Amber Foundation (Germany), INIAP and INBAR (Ecuador), Biocomercio (Colombia) and Cuculmeca (Nicaragua).

- Successful collaboration with CATIE's GIS Laboratory in two consultancies on: "Evaluation of the Use of Remote Sensing for Crop Monitoring in Belize", for Consejo Nacional para la Cooperación Agrícola (CERECA), Costa Rica; and "Modernization of Crop Yield Forecast Systems for Basic Grains in Nicaragua", for U.S. Department of Agriculture, Washington, D.C.

Outreach Program

As mentioned at the beginning of this report, several structural changes took place during the report period: i) CATIE created an Office for Regional Technical Services, dedicated to the identification, creation, negotiation, execution and follow-up of development projects; ii) the Outreach Program was transformed into the Department of Regional Outreach and Strategic Planning. This department has the function of supervising CATIE's National Technical Offices, the Training Area and everything related to Planning, Monitoring and Evaluation analyzed at the beginning of this report.

The results are presented below, following the work thrusts that the two departments (Regional Outreach and Strategic Planning and Regional Technical Services) have under their responsibility.

Strengthening of the NTO's as antennas and representative of CATIE in the countries

This thrust includes several specific objectives which make it possible to balance the role of the NTO's as antennas of CATIE in the countries, platform of action and coordination for CATIE's activities with its partners in the countries and as a technical assistance service provider to the countries.

Support to technical, administrative, and institutional management of CATIE's projects in the countries. During the 2002, all the offices significantly improved the support and coordination between research and development projects and initiatives such as the Biodiversity network in Colombia, the Agroforestry Network and other new projects on diverse topics (cacao, biodiversity and non-timber resource management and watershed management). Thanks to better coordination with some of the current projects in the countries, the Offices are now offering better services. National institutions are consulting directly with them; they also help projects in their negotiations with decision-makers (in particular, support was provided to the IPM/AF project in Nicaragua, Guatemala and Honduras, to the Transforma and Focuencas Projects in Nicaragua and Honduras, to the Bamboo project in Colombia, and to the PRODERNOR and PAES in El Salvador).

Support to teaching and training activities. For the first time, formal negotiations were initiated to support the processes for teaching directly in the countries. In addition, ANAM began to offer the first graduate degree in Natural Resource Management in Panama. The following countries have been directly involved in negotiations with CATIE to develop training/higher education activities: Colombia (negotiation of a graduate-level degree in Environmental Economics and Planning Monitoring and Evaluation); Nicaragua, in conjunction with the UNA, for a Masters in Agroecobusiness. In addition, the NTOs continued offering support in the identification and support to the Master's students enrolled in the Education Program.

According to the new medium-term plan for the NTOs and based on the demand analyses carried out before elaborating a new strategic plan for CATIE, the NTOs have assumed the challenge of developing national training programs in close collaboration with the CATIE alumni. The topics identified and offered were: watershed management, rural development with a focus on gender, Planning, Monitoring and Evaluation of conservation and development projects.

NTO's as service entities. In conjunction with national technicians, including Master's Program alumni, CATIE has participated in more than 20 bids in El Salvador, Mexico, Guatemala and Nicaragua in conjunction with the office of Regional Technical Services. In addition, and as a consequence of the change in the composition of NTO personnel toward a more technical profile, the National Technical Offices provided technical assistance services to universities, government and research centers in particular in Nicaragua, Honduras, El Salvador and Colombia, in the following topics: forest plantations, agroforestry, watershed management, disaster prevention, natural forest management.

The NTOs as antennas and dissemination units. The role of the NTOs was strengthened in several fields:

- Dissemination of CATIE's activities in each of the countries through bulletins and other means
- Identification and dissemination to the headquarters of the programs of priority to the Government and in general; national development policies. This information was given more emphasis when preparing CATIE's new strategic plan.
- Identification and dissemination to the headquarters of requests and needs in national trans-border and regional projects.

In general, there has been diversification insofar as the target public of the Offices (private sector, NGOs, national funds), as well as an increase in institutional relations and management activities. CATIE has increased its role as facilitator of actions and exchange among different organizations (in Nicaragua, Colombia and Panama, for the most part). A key factor was the demand analysis (consultations) developed in 2001 as part of the process to elaborate CATIE's Strategic Plan. This allowed CATIE to widen its scope of actions with sectors where it previously had little contact.

An increased number of institutions in the countries receive information on CATIE's activities, mainly through printed bulletins (Guatemala, Colombia and Nicaragua), newspaper reports and electronic mail and participation in fora and events. The Center has also taken advantage of dissemination opportunities such as national and regional fairs, and technical publications have been distributed and sold.

The different services offered by the Center have been presented in collaboration with different CATIE entities. These include services in graduate education, tools for the management of forest and plantations (for example, the software for forest plantation management "Silvia" and "Mirasilva") and in planning, monitoring and evaluation.

Internal management of the NTOs.

- ✓ The cooperation and exchange of information with the IICA Offices in CATIE´s member countries improved.
- ✓ CATIE has significantly improved the NTO's administrative, management and financial organization, thanks to the consolidation of efforts within the Regional Outreach and Strategic Planning Department with the Administrative and Internal Auditing Departments. The administrative and financial management of the NTOs has become more professional and standardized, thanks to the effective application of norms and procedures.
- ✓ The clarification of the functions and roles of the NTO's has been determinant in the positioning of the NTO's in the region. This has explicitly permitted the more efficient use of the human resources available in the Region, in particular the CATIE alumni.
- ✓ For the first time, tools for planning and monitoring as well as operational plans (activities and products) to guide the National Technical Offices are in place and functioning. This has allowed CATIE to : I) define common guidelines – although differentiatd according to specificities of the countires and the NTOs' installed capacities – ii) generate annual work plans and iii) facilitate the follow-up and evaluation of the NTOs' actions and strategies, global medium-term planning framework for the NTOs). In particular, it has allowed us to facilitate the elaboration of reports based on effects and performance. The teams, mainly in Honduras and Nicaragua, hold planning, monitoring and evaluation meetings as fora for exchange and feedback.
- ✓ Besides the management of membership fees, some Offices (for example, Nicaragua) have been able to generate their own funds to strengthen their technical and administrative capacity (personnel and operational expenses).

Formulation and negotiation of proposals for technical assistance projects/activities

This work thrust helps channel and respond to technical cooperation opportunities; which include technical missions and reinforcements of ties with the main clients and partners in the countries, the signing of cooperation agreements and the formulation and negotiation of proposals.

Through Regional Technical Services (RTS), CATIE offers technical services to governments, public and private institutions and non-governmental organizations in member countries through the RTS Office. Since its creation and until this time, RTS has worked under CATIE's institutional framework, as a project negotiation/management office. Nevertheless, it has been suggested that this office function under a more business-like focus and therefore, should assume its operative costs and contribute to CATIE's core budget, with overhead and savings from contracts and negotiations, after having covered its needs and commitments acquired formally with its clients. Its main services are:

a) Participate in public and private bids and tenders.
b) Offer specialized technical services/consultancies.
c) Negotiate projects with cooperating and donor organisms.
d) Negotiate services related to administration of funds.

In 2001-2002, CATIE through STR negotiated more than 80 projects. Participation in public bids and tenders was also a way to maintain the Center's presence in countries such as Belize, Costa Rica, El Salvador, Colombia, Guatemala, Honduras, Mexico, Nicaragua, Panama and the Dominican Republic, among others. RTS's performance in project negotiation generated significant achievements in 2002; it obtained projects for a total amount of US $ 1,802,000 which represents different direct and indirect benefices for CATIE.

The projects negotiated by RTS have been strongly centered in the area of watershed management, followed by other environmental topics, agricultural competitiveness, management of natural disasters, forest management, environmental services, training and rural development. Numerous proposals elaborated have regional coverage.

Among all the technical missions, some 20 were directed to directly support, with techical assistance different governmental and non governmental organizations linked to development programs, high education as well as technical assistance related to watershed management, seed forest management, forestry management plan at local and national level as well as forest certification.

All the above activities were carried out mainly in Belize, Colombia, Mexico, Venezuela, Dominican Republic, Costa Rica, El Salvador, Panama, Honduras, Nicaragua, Guatemala, Puerto Rico and Ecuador.

Implementation of development and research projects in the member countries

This involved development projects and field demonstrations of the best technologies available, whether they were generated by CATIE or by other outside stakeholders. With the support of national counterpart institutions and with the active participation of the communities, extension, demonstration and validation activities in the pilot areas are combined with the dissemination of information and the exchange of experience. The most relevant progress made by the projects is presented below.

Hillside Farmers Fund. Technical service training was provided for private farmers under agreements with pubic institutions, approved and in-progress technology transfer subprojects, microwatershed management plans and consultancies on agriculture, animal husbandry and forestry in the areas of FPPL and priorities for research in sustainable hillside agriculture.

Sustainable Development Program in Peten, Guatemala. Forty-five hectares of land were legalized and several consultancies were undertaken on tourism infrastructure and restoration for the cultural heritage subproject. A base-line study was conducted for the subproject on natural resource management. Training modules for teachers and for archeological site security were designed. This project was renegotiated with the IDB in 2002.

FOCUENCAS, Honduras and Nicaragua.

- Eighteen municipalities assume leadership in watershed management. Strengthening of environmental municipal units, association of municipalities for watershed management ("mancomunidades"), ordinances and regulations for the protection of natural resources..

- Dissemination of technologies to promote a watershed management approach: use of local intake available, incorporation of the tree and shrub-like components in cattle and agricultural farms, diversification and commercialization of production (including small animals, micro-irrigation, protection to water sources and courses, environmental services, marketing and commercialization). Participants in this process include community extensionists, 30 000 families, in some 100 local projects through 70 rural organizations in six demonstrative sub-watersheds in Honduras and Nicaragua.

- A change of attitude among local populations: professors and students implement demonstrative practices on management of natural resources, to produce food products, natural medicines and animal proteins as part of their study plans. Several educational institutions participate in this process, which means over 100 professors, nearly 1000 students, as well as water and school administrative boards; producer organizations in 18 municipalities and 6 sub-watersheds in Honduras y Nicaragua.

- Relevant studies were carried out in 15 watersheds, under a thesis research modality; some relevant ones include: methodologies to form organizations related to watershed management, methodologies to evaluate vulnerability, payment for environmental services in watersheds, relationships between land use and water quality.

- 35 approved and in operation (US $195K) in 8 microwatersheds and 14 municipalities, 1717 families benefiting from productive projects (22) and 21,800 families benefiting from communal environmental projects (13).

MIP-AF, Nicaragua and Trifinio. Some 350 extensionists and 100 trainers were trained to expand efforts to more than 8,000 families in five agro-ecological regions in Nicaragua, 500 families in Trifinio and 600 coffee-growing families in southern Honduras. Thanks to their accumulated experience, the knowledge gained from other projects and work teams (for example CATIE's PECALA group), the graduate school (agroforestry, sustainable agriculture, socioeconomics) and training (agroforestry, socioeconomics) are being incorporated. Several

publications have been produced for the use of farming families, extensionists, trainers, decision-makers and students. Regional trials are continuing on coffee systems (Nicaragua, Costa Rica), shade-trees in coffee fields (Guatemala, Honduras, El Salvador, Nicaragua and Costa Rica) as is participatory research to improve coffee field designs and to generate technologies for vegetable crops, bananas and plantains and fruit trees.

TRANSFORMA Project (CATIE/COSUDE), Nicaragua and Honduras. After six years of execution, the TRANSFORMA Project will culminate in April 2003. The main outputs during the 2001 and 2002 are:

- Publication of technical documents (28 including articles in journals), manuals (1) and several publications in CATIE's technical series.
- Eight documentation centers supported in the Atlantic region of Honduras and Nicaragua with nearly 200 publications.
- The realization of over 85 training activities with the participation of 2,155 persons, a third of which were women. Topics covered included technical issues, strategic planning, managerial and organizational aspects, and quality control, among others. The 14th edition of the “Intensive, international course on the diversified management of tropical forests” was also carried out with 23 participants from nine countries.
- The VI Exchange of Forestry Professors in Central America was held in June 2002. This activity, which boasted the participation of eight Central American universities, generated information for developing a didactic, academic text on forest management planning.
- Support to two Masters students in the completion of their thesis projects in Operational Management Areas in Honduras and Nicaragua.
- TRANSFORMA supported the consolidation of three networks of horizontal cooperation operating in Honduras and Nicaragua: REMBLAH, REPROMAB and REMARIO. Presently over 140 entities are members of these networks representing public and private sector entities, producer groups, universities and technical schools, indigenous cooperatives, groups involved in the transformation of wood products, among others.
- TRANSFORMA supported regional forum on critical issues affecting the forest sector in the RAAN and Rio San Juan regions of Nicaragua, for example, illegal logging, fiscal irregularities, technical norms and administrative procedures.
- An ambitious program to consolidate Operational Management Areas and attain a multiplier effect of promising initiatives was carried out.
- Co-execution and co-financing were successfully pursued with over 20 collaborating projects and organizations.
- Carried out a training and technical assistance program in the Rio Platano Biosphere, co-financed by the BRP Project (COHDEFOR/GTZ)
- AMO Toncontin (Honduras) was selected as the site to validate the latifoliate forest management criteria and indicators. AMO installed 8 plots to monitor the results of silvicultural treatments applied to *Magnolia yoroconte*
- The General Management Plan and the Operational Plan for the Sawacito cooperative were elaborated.
- In Honduras three forestry fairs were held to promote the commercialization of furniture made from non-traditional species and the sale of orchids by the Toncontin Womens’ Group.
- General inventories were conducted in 4 new areas on Honduras’ northern coast.

CATIE/FOMIN (MIF) Project, Guatemala, Honduras and Nicaragua. This project will provide important continuity to several of the more promising initiatives begun by CATIE/TRANSFORMA. The CATIE/FOMIN Project will place more emphasis on managerial aspects, marketing and commercialization. During 2002, CATIE got approval for the Project "Mejoramiento de la competitividad de PyMEs forestales en América Central", the first forestry project financed by this IDB fund, and the recruitment of key project personnel began in November 2002.

Training

In 2001 and 2002, 375 training events were held benefiting 8,783 participants; approximately one third of which were women. Most of the events were held in the member countries compared with the number of events developed at the Costa Rica headquarters. Of this total, 158 events were short courses (strategic and special courses) The 57 remaining events were workshops, seminars, forums, talks, in-service training, symposiums, field days, work meetings and technical assistance. The following tables show the number of activities and participants as well as the distribution of training events in the regional countries.

Table 15. Training activities held in 2001 and 2002 (countries and headquarters)

Type of event	2001	2002	total	2001	2002	total
Inservice training	7	7	14	19	15	34
Talks and conferences	11	13	24	1.115	406	1.521
Congresses	1	0	1	185	0	185
Special courses	53	85	138	1.057	1.779	2.836
Strategic courses	10	10	20	92	75	167
Forums	0	2	2	0	156	156
Trips and field days	9	9	18	552	176	728
Technical and work meetings	31	0	31	337	0	337
Seminars	1	5	6	50	104	154
Symposiums	0	1	1	0	77	77
Workshops and demostrations	32	83	115	617	1.943	2.560
Other	5	0	5	28	0	28
Total	160	215	375	4.052	4.731	8.783

Table 16. Distribution of training events by country (2001 – 2002).

country	2001	2002	Total
Belize	1	1	2
Brazil	1		1
CATIE/Turrialba	50	34	84
Colombia	1		1
Costa Rica	27	5	32
Cuba	2		2
Ecuador		12	12
El Salvador	3	54	57
Guatemala	2	5	7
Honduras	34	47	81
México		7	7
Nicaragua	30	44	74
Panama	4	1	5
Puerto Rico	2		2
Dominican Rep.		1	1
Others	3	4	7
Total	160	215	375

Management and dissemination of technical/scientific information

Journals. In 2001 and 2002 the following journals continued to be published and distributed: Manejo Integrado de Plagas (MIP), Agroforesteria en las Americas (RAFA) and Forestal Centroamericana (RFCA). The electronic versions of these journals are available online. The number of subscribers more than doubled in 2000. These data are presented in the following table.

Table 17. CATIE journal subscriptions (2001 - 2002).

Journal	Exchanges	Donations	Subscriptions	Electronic subscription	Total
RAFA	46	107	275	27	455
MIP	47	66	243	27	383
RFCA	45	207	295	42	589
Total	138	380	813	96	1.427

Institutional Web. The CATIE Web Publishing Committee was formed, under the responsibility of the Communications Unit. Several specific activities have been developed, including (a) the creation of institutional internet and (b) the redesigning and restructuring of the map, and updating of the Web. Several different documents have been put online and every two weeks new news is posted. Databases were created with research articles and the CVs of key personnel, and work continues on the coffee collection database (CafeBase). New sections were opened in

the CATIE Web page including the alumni association, the white fly, science week, and organic fertilizers and pest control products, among others.

Communications Systems and Internet. The internet band width was increased to allow faster communication to and from CATIE. With regard to modem access to our local network, a remote access server was installed to allow 8 simultaneous sessions. At the local network level, larger capacity equipment (switches and conmuters) has been installed to allow better data transfer. In the Internet, a new server for electronic mail, Web, List serves and user directories was brought online due to the increase in users and equipment that required greater processing and storage capacity.

GIS laboratory - Support to municipalities for regional planning and land management. Growing out of the work from previous years with the Municipality of Turrialba, and the conceptualization of the "Municipal Information System for Land Management" (SIMT, for its Spanish description), the GIS Laboratory has developed a growing relationship with municipalities throughout the region, and especially in Costa Rica. Two important facts emerged from this activity:

- CATIE's GIS lab was uniquely capable of resolving the GIS problems of implementing the municipal cadastre (60 other attempts had failed), and

- The development of town cadastres generated new funds for municipalities. These funds may potentially be used for important environmental efforts, such as vulnerability reduction due to flooding or landslides, protection of water sources, and payments for environmental services.

On the basis of these observations, a proposal was developed for the creation of the "Regional Center for Municipal Level Environmental Monitoring and Evaluation", included in CATIE's draft of the medium term plan, and presented to donors as a concept. The mission of this center would be to reinforce municipal capabilities in spatial analysis through applied research and training of technicians, and to integrate cadastral mapping in environmental management activities, such as land use management through payments for environmental services.

The most important results and activities during the period are:

- Inauguration of the Turrialba Municipal GIS, by Dr. Miguel Angel Rodriguez (then President of Costa Rica) and Lic. Ovidio Pacheco (then President of the National Assembly). Presentation highlights the financial success of the Turrialba implementation and has become a model for other municipalities, including the approval of Canton Jimenez Town Cadastre Project, Plan Indigenous Lands Cadastre for ICE Boruca Hydroelectric Project and others.

- Initiated discussions of Payment for Environmental Services project, JASEC.

- Development of Memorandum of Understanding between CEPREDENAC and CATIE regarding technical support in vulnerability reduction (David Novello, Pablo Torrealba).

- Presentation of municipal system to Paraiso, Cartago Mayor and town council at CATIE.

- Technical support for municipal vulnerability project, Honduras. Initial discussions for Municipal Cadastre for Valle de Angeles with Minister of Environment, Honduras.

- Coordination with University of Minnesota, for USDA-funded hydrological modeling project in Turrialba Valley.

- Presentation of Turrialba mapping and cadastre experience: in national level workshop "National Plan for Urban Development"; to US Ambassador Danilovich, in support of request by Costa Rican President Abel Pacheco for Turrialba watershed disaster mitigation; to Municipality of Tres Rios.

- Presentation to US Embassy staff on reduction of vulnerability for Turrialba as background for US Embassy actions in Costa Rica. Hosting of US Army Corps of Engineers inspection team for flood damage and mitigation assessment for Turrialba River.

- Presentation of Municipal cadastre proposal, Municipality of El Guarco, Cartago, Costa Rica.

- Meetings and negotiations with Directorate of IFAM (Instituto de Fomento y Administracion Municipal) to initiate collaborative work.

- Presentation of Municipal Cadastre to Mayor of Tegucigalpa, Honduras, and representatives of 45 Honduran municipalities, to explore collaborative options (meeting postponed).

- Meeting with Minister of Hacienda of Costa Rica, Jorge Walter Bolaños, regarding technical support of CATIE to $92 million IDB-financed National Land Regularization Project (cadastre).

5. CONCLUSIONS

During the 2001-2002 biennial period, CATIE strengthened the processes for profound internal and external changes in its activities and position toward the Region. Parallel to the efforts to modernize the Graduate School and strengthen its regional research program, regional outreach mechanisms were also strengthened. A new Strategic Plan for 2003-2012 was elaborated which represents a starting point as well as input for the structural changes developed. There is no doubt that the strengthening of CATIE's core budget through innovative mechanisms and a joint effort among member countries and international cooperation will be crucial in the implementation of the changes defined in the strategic plan adjusted to meet the needs and demands of the Region.

Acronyms

ACRI	American Cocoa Research Institute
ADITIBRI	Association for the Integrated Development of the Bribri Territory
ADITICA	Association for the Integrated Development of the Cabecar Indigenous Territory
AEC	Common External Tariff
AID	US Agency for International Development
AMO	Operative Management Areas
ANAM	National Environment Authority (Panama)
APPTA	Small Farmers Association of Talamanca
ARESEP	Public Services Regulating Authority
ARS	US Agricultural Research Service
BRP	Project for the Management and Protection of the Rio Platano Biosphere
CARICOM	Caribbean Community
CASFOR	Forest Carbon-Fixing Project
CCAD	Central American Commission on Environment and Development
CeCoECO	Center for Eco-business competitiveness
CEPREDENAC	Coordination Center for the Prevention of Natural Disasters in Central America
CERBASTAN	Cerbastan Farm, La Pacífica
CERECA	National Council for Agricultural Cooperation
CIAT	International Tropical Agriculture Center
CICAD	Inter-American Commission for the Control of Drug Abuse
CIFOR	Center for Forestry Research
CINPE	International Center of Economic Policy for Sustainable Development Center
CIPAV	Research Center for Sustainable Agriculture Production Systems (Colombia)
CIRAD	International Center for Agricultural Research (France)
CNP	National Farming Council
COHDEFOR	Honduran Corporation for Forestry Development
CONACYT	National Science and Technology Council
CONICIT	National Council for Scientific and Technological Research
CORPOICA	Colombian Corporation for Agricultural Research
COSUDE	Swiss Development Corporation
DAAD	German Academic Exchange Service
DANIDA	Danish International Development Agency
DINADERS	National Directorate for Sustainable Rural Development
EARTH	EARTH University (Costa Rica)
ECOMAN	Sustainable Ecosystem Management in Atlantic Rain Forest Rural Areas
FAO	Food and Agriculture Organization of Unites Nations
FINNIDA	Finnish Agency for International Development
FOCUENCAS	Local capacity strengthening in watershed management and prevention of natural disasters
FONACIT	National Fund for Science Technology and Innovation (Venezuela)
FONTAGRO	Regional Fund for Agricultural Technology of the IDB
GCG	Global Change Group
GEF/WB	Global Environmental Facility / World Bank

GIS	Geographic Information System
GTZ	German Society for Technical Cooperation
REMARIO	Horizontal Cooperation Network for Natural Forest Management and Conservation in Rio San Juan (Nicaragua)
ICAFE	Coffee Institute of Costa Rica
ICE	Costa Rican Electricity Institute
ICTA	Agriculture Sciences and Technology Institute
IDB	Interamerican Development Bank
IDIAP	Agriculture and Livestock Research Institute (Panama)
IGERT	Integrative Graduate Education and Research Traineeship
IICA	Interamerican Institute for Cooperation in Agriculture
INAFOR	National Forest Institute (Nicaragua)
INBAR	International Network for Bamboo and Rattan (China)
INCO	International Cooperation with Developing Countries of the European Union
INIAP	Institute for Agricultural Research
INIBAP	International Network of Investigation on Banana and Plantain
INTA	Agriculture and Livestock Technology Institute (Nicaragua)
IPGRI	International Institute for Plant Genetic Resources
IPM	Integrated Pest Management
IRD	Institute of Research for Development
ITTO	International Organization of Tropical Timber
IUCN	World Union for Nature
IUFRO	International Union of Forestry Research Organizations
JASEC	Cartago Administrative Board of Electronic Services
JICA	Japanese Agency for International Cooperation
KFW	Kreditanstalt Für Wiederaufbau (Germany)
MAG	Ministerio de Agricultura y Ganadería (Costa Rica)
MAGA	Ministry of Agriculture, Livestock and Food (Guatemala)
MDL	Mecanismo de Desarrollo Limpio
MINAE	Ministry of Environment and Development (Costa Rica)
MIP/AF	Regional Program for Participative Implementation of Integrated Pest Management and Agroforestry
NGO	Non-Governmental Organism
NTO	National Technical Office (CATIE)
NITLAPAN	NITLAPAN Institute, Central American University, Managua (Nicaragua)
NORAD	Norwegian International Development Authority
NRI	National Resources Institute (United Kingdom)
OAS	Organization of American States
OIRSA	International Regional Organism for Plant and Animal Health
PAAR	Rural Areas Administration Project (Honduras)
PABID	Impacts of subsidiary plantations on biodiversity and local development
PAES	Environmental Program (El Salvador)
PECALA	Ecological Production of Annual Crops on Hillsides
PNUMA	United Nations Environmental Program
POSAF	Socio-environmental and forest development Program (Nicaragua)
PRODERNOR	Rural Development Project for the Population of Northeastern El Salvador

PROFOR	Forestry Project of Nicaragua
PROMECAFE	Coffee Improvement Program of Central America and the Caribbean
PRONADERS	National Sustainable Rural Development Program (Honduras)
PROSEFOR	Forest Seeds Project
RAFA	Agroforestry Journal of the Americas
REMBLAH	Honduran Humid Broadleaf Forest Network
REPROMAB	Triángulo Minero and Prinzapolka Forest Management Protection Network
RFCA	Central American Forestry Journal
RTS	Regional Technical Services
SANet	Sustainable Alternatives Journal
SICTA	Central American Integrated Agricultural Technology System
SIDA	Swedish International Development Agency
SIMO	Support to Institutional Management and Outreach Project
SMEE	Small and medium ecological enterprises
TRANSFORMA	Natural Forest Management Technology Project
UE-INCO	European Union – International Cooperation with Developing Countries
UNA	Universidad National Autonomous University (Nicaragua)
UNDP	United Nations Program for Development
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
USDA/ARS	Department of Agriculture/Agricultural Research Service
UTA	Technical Support Unit
WWF	World Wildlife Fund
Zamorano	Pan-American Agricultural School (Honduras)

Annex 1. Governing Authorities

GOVERNING COUNCIL

As of January 20, 2001

Ing. Rodolfo Coto, Minister of Agriculture and Livestock, Costa Rica. Chairman.
Ing. Mariano Jiménez, Secretary of Agriculture and Livestock, Honduras
Ing. Augusto Navarrro, Minister of Agriculture, Livestock and Forestry, Nicaragua
Hon. Daniel Silva, Minister of Agriculture, Fisheries and Cooperatives, Belize
Mr. Javier Usabiaga, Secretary of Agriculture, Livestock and Rural Development, Mexico
Dr. Efrén Andrade, Minister of Comerse and Production, Venezuela
M.B.A. Salvador Urrutia, Minister of Agriculture and Livestock, El Salvador
Ing. Eligio Mejía, Secretary of Agriculture, Dominican Republic
Ing. Pedro A. Gordón, Minister of Agricultural Development, Panama
Ing. Edin Barrientos, Minister of Agriculture, Livestock and Food, Guatemala
Dr. Rodrigo Villalba, Minister of Agriculture and Rural Development, Colombia
Hon. Roger Clarke, Minister of Agriculture, Jamaica (IABA representative)
Dr. Chelston Brathwaite, Director General, IICA
Dr. Pedro Ferreira Rossi, Director General, CATIE. Ex Officio Secretary

BOARD OF DIRECTORS

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Ing. Rodolfo Coto (Costa Rican Minister of Agriculture) (indefinite)
Dr. Pedro Ferreira, Ex Officio Secretary

Annex 2. CATIE´s Technical staff, December 2002.

name	nation
Aguilar Maria Elena	Costa Rican
Ammour Tania S.	French
Beer John William	English
Campos Jose Joaquin	Costa Rican
Cifuentes Arias Miguel	Ecuadorian
Donovan Jason	American
Ebert Andreas Wilhelm	German
Faustino Jorge	Peruvian
Finegan Bryan Gerald	English
Galloway Glenn	American
Garcia Carlos	Mexican
Gonzalez Alan	Guatemalan
Gretzinger P. Steven	American
Guharay Falguny	Indian
Haggar Jeremy Philip	English
Harmand Jean-Michael	French
Harvey Celia	American
Hilje Luko	Costa Rican
Ibrahim Muhammad	Guyana
Imbernon Jacques	French
Jimenez Francisco	Costa Rican
Jones Jeffrey R.	American
Kanninen Markku	Finnish
Krauss Ulrike	German
Locatelli Bruno	French
Louman Bastiaan	Netherlander
Moreno Raul Alberto	Chilean
Moslemi Ali	American
Muschler Reinhold G.	German
Navarro Carlos Manuel	Costa Rican
Navarro Guillermo	Costa Rican
Pedroni Lucio	Swiss
Pocasangre Luis Ernesto	Honduran
Powell George Van Nostrand	American
Rivas Gonzalo G.	Costa Rican
Riveros Alba Stella	Colombian
Rodriguez Roduel	Honduran
Rosales Franklin	Honduran
Rottger Ulrich	German
Sanchez Vera	Costa Rican
Somarriba Eduardo	Nicaraguan
Staver Charles Paul	American
Stoian Dietmar	German
Ten Hoopen Gerben Martijn	Netherlander
Topart Patrick	French
Ugalde Luis Alberto	Costa Rican

Vaast Philippe Jacques	French
Vargas Ortega Eliecer	Costa Rican

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